

Application No. 10/065,866
Attorney Docket No. 129716
Amendment dated January 25, 2005
Reply to Office Action of November 26, 2004

REMARKS

The present application includes claims 1-36. Claims 8, 19 and 26-36 have been allowed. Claims 1-7, 9-18 and 20-25 are rejected. Claims 4, 11, 12 and 25 are amended in response to the Examiner's rejections. Claim 25 is also amended to correct a typographical error. Claim 13 is canceled.

Claim 4 is amended to recite a tilt subsystem including a ball screw and rotary nut for tilting a patient positioning surface.

Claim 11 is amended to recite returning the patient positioning surface to a horizontal starting position for emergency situations.

Claim 12 is amended to recite maintaining a region of interest of the patient by tilting the patient positioning surface using a ball screw and rotary nut during movement of the patient positioning surface

Claim 25 is amended to recite a table capable of longitudinal tilt using a ball screw and rotary nut.

Claims 11, 13, 15, 16 and 25 were rejected under 35 U.S.C. § 102(b) as being anticipated by Nonaka et al. (U.S. Patent No. 6,094,760.)

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Claims 1, 2, 5, 6, 9, 10, 17 and 20-24 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Nonaka in view of Uosaki et al. (U.S. Patent No. 5,210,893), and further in view of Horsey. (U.S. Patent No. 4,013,019.)

Claim 3 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Nonaka in view of Kamata (U.S. Patent No. 5,237,600), and further in view of Horsey.

Claims 7 and 18 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Nonaka in view of Uosaki et al. and Horsey, and further in view of Velazquez. (U.S. Patent No. 4,484,571.)

Claims 4 and 12 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Nonaka in view of Pattee. (U.S. Patent No. 6,615,428.)

Claim 14 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Nonaka in view of Velazquez.

Rejections under 35 U.S.C. § 102(b)

The Applicant first turns to the rejection of claims 11, 15, 16 and 25 under 35 U.S.C. § 102(b) as being anticipated by Nonaka. Nonaka describes a bed system for radiation therapy. Specifically, Nonaka describes brake mechanisms that stop the movement of the bed system in an emergency situation. The brake mechanisms can be applied to each of the rotation and transfer parts so that when an interruption occurs, such as an emergency, so that there is no position displacement of the bed. (col. 6, lines 42-

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51.) Specifically, Nonaka describes providing brake mechanisms on the x-axis slide base (34), lift stand (42), y-axis slide plate (52), and bed pedestal (64) so the table does not slide and there is no position displacement in an emergency situation. (col. 6, lines 63-67; col. 7, lines 1-3; col. 10, lines 60-67; col. 11, lines 35-39, 48-51; col. 12, lines 30-33.)

However, Nonaka does not teach or suggest returning the patient positioning surface to a horizontal starting position for emergency situations, as recited in claim 11. Conversely, as described above, Nonaka merely describes stopping the movement of the treatment table in the case of an emergency, so there is no position displacement of the bed. (col. 6, lines 42-51.) Nonaka is devoid of any disclosure teaching or suggesting returning the patient positioning surface to a horizontal starting position for emergency situations. Thus, the Applicant respectfully submits that Nonaka does not teach or suggest elements of at least claim 11.

In addition, as stated by the Examiner on page 4 of the Office Action of November 26, 2004, Nonaka does not teach a tilt subsystem including a ball screw and rotary nut, as recited in claim 25. (Nov. 26, 2004, Office Action, page 4.) Thus, the Applicant respectfully submits that Nonaka does not teach elements of at least claim 25.

The present rejection encompasses claims 11, 15, 16 and 25. Claims 11 and 25 are amended to recite limitations not taught by Nonaka. Claims 15 and 16 depend from claim 11. Therefore, the Applicant respectfully submits that claims 11, 15, 16 and 25 should be allowable.

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Rejections under 35 U.S.C. § 103(a)

The Applicant next turns to the rejection of claims 1, 2, 5, 6, 9, 10, 17 and 20-24 under 35 U.S.C. § 103(a) as being unpatentable over Nonaka in view of Uosaki, and further in view of Horsey.

As stated by the Examiner on page 4 of the Office Action of November 26, 2004, Nonaka, as modified by Uosaki, does not teach a tilt subsystem including a ball screw and rotary nut, as recited in claims 1 and 17. (Nov. 26, 2004, Office Action, page 4.)

Horsey describes a tiltable X-ray table. However, Horsey does not remedy the shortcomings of Nonaka and Uosaki, as described above. Specifically, Horsey describes a table body (14) that translates in a longitudinal direction using the ball nut and screw shaft assemblies (24) and (33). (col. 3, lines 18-24, 30-44, 58-61; col. 4, lines 37-42; col. 5, lines 19-23, 43-48.) The longitudinal translation of the table body (14) is caused by operation of the screw shafts (23) and (32) within their relatively stationary ball nuts (40). (col. 5, lines 43-46.)

The table of Horsey is capable of a tilting motion by rotating the table about an axis defined by a rotational shaft (39). (col. 5, lines 12-28.) The tilting motion is caused by a rack gear (47) or driver means attached to the table body (14) meshed with pinion gear (45). (col. 5, lines 19-23.) In other words, the tilting motion of the table described

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by Horsey is caused by rotating about a rotational shaft using a rack gear, and is not caused by a ball screw and rotary nut combination.

Therefore, Horsey does not remedy the shortcomings of Nonaka and Uosaki, as described above. Specifically, Horsey does not teach or suggest a tilt subsystem including a ball screw and rotary nut, as recited in claims 1 and 17. Conversely, Horsey merely describes use of ball nut and screw shaft assemblies (24) or (33) for longitudinal translation of the table, while tilting of the table is caused by rotating the table about a rotational shaft (39) using a rack gear (47) meshed with pinion gear (45). (col. 5, lines 19-23; col. 4, lines 37-42.) Thus, the Applicant respectfully submits that Horsey does not teach or suggest elements of at least claims 1 and 17.

Moreover, assuming for the sake of argument that one were motivated to combine Nonaka, Uosaki, and Horsey, the combination would similarly fail to teach or suggest elements of at least claims 1 and 17. As described above, none of Nonaka, Uosaki, and Horsey, alone or in combination, teach or suggest a tilt subsystem including a ball screw and rotary nut for tilting a patient positioning surface, as recited in claims 1 and 17. Therefore, the Applicant respectfully submits that a combination of Nonaka, Uosaki, and Horsey also fails to teach or suggest elements of at least claims 1 and 17.

The present rejection encompasses claims 1, 2, 5, 6, 9, 10, 17 and 20-24. The Applicant submits that claims 1 and 17 recite elements not taught or suggested by Nonaka, Uosaki, or Horsey, taken alone or in combination. Claims 2, 5, 6, 9, 10, and 20-

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24 depend from claims 1 and 17. Therefore, the Applicant respectfully submits that claims 1, 2, 5, 6, 9, 10, 17 and 20-24 should be allowable.

The Applicant next turns to the rejection of claim 3 under 35 U.S.C. § 103(a) as being unpatentable over Nonaka in view of Kamata, and further in view of Horsey. As stated by the Examiner on page 4 of the Office Action of November 26, 2004, Nonaka, as modified by Kamata, does not teach the use of a tilt subsystem including a ball screw and rotary nut, as recited in claim 3. (Nov. 26, 2004, Office Action, page 4.)

Horsey describes a tiltable X-ray table. However, Horsey does not remedy the shortcomings of Nonaka and Kamata, as described above. Specifically, Horsey does not teach or suggest a tilt subsystem including a ball screw and rotary nut, as recited in claim 3. Conversely, as described above, Horsey merely describes use of ball nut and screw shaft assemblies (24) or (33) for longitudinal translation of the table, while the tilting motion of the table is caused by a rack gear (47) meshed with pinion gear (45). (col. 5, lines 19-23; col. 4, lines 37-42.) Thus, the Applicant respectfully submits that Horsey does not teach or suggest elements of at least claim 3.

Moreover, assuming for the sake of argument that one were motivated to combine Nonaka, Kamata, and Horsey, the combination would similarly fail to teach or suggest elements of at least claim 3. As described above, none of Nonaka, Kamata, and Horsey, alone or in combination, teach or suggest a tilt subsystem including a ball screw and

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rotary nut for tilting a patient positioning surface, as recited in claim 3. Therefore, the Applicant respectfully submits that a combination of Nonaka, Kamata, and Horsey also fails to teach or suggest elements of at least claim 3.

The present rejection encompasses claim 3. The Applicant submits that claim 3 recites elements not taught or suggested by Nonaka, Kamata, or Horsey, taken alone or in combination. Therefore, the Applicant respectfully submits that claim 3 should be allowable.

The Applicant next turns to the rejection of claims 7 and 18 under 35 U.S.C. § 103(a) as being unpatentable over Nonaka in view of Uosaki and Horsey, and further in view of Velazquez. As stated by the Examiner on page 4 of the Office Action of November 26, 2004, Nonaka, as modified by Uosaki, does not teach a tilt subsystem including a ball screw and rotary nut, as recited in claims 1 and 17. (Nov. 26, 2004, Office Action, page 4.)

Horsey describes a tiltable X-ray table. As described above, Horsey also does not teach or suggest a tilt subsystem including a ball screw and rotary nut for tilting a patient positioning surface, as recited in claims 1 and 17.

Velazquez describes a patient security and restraint system. However, Velazquez does not remedy the shortcomings of Nonaka, Uosaki, and Horsey. Specifically, the table assembly of Velazquez is only capable of movement vertically and longitudinally.

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(col. 3, lines 19-25.) Velazquez is devoid of any disclosure of any other movements of the table assembly. Therefore, Velazquez is incapable of teaching or suggesting a tilt subsystem including a ball screw and rotary nut for tilting a patient positioning surface, as recited in claims 1 and 17. Thus, the Applicant respectfully submits that Velazquez does not teach or suggest elements of at least claims 1 and 17.

Moreover, assuming for the sake of argument that one were motivated to combine Nonaka, Uosaki, Horsey, and Velazquez, the combination would similarly fail to teach or suggest elements of at least claims 1 and 17. As described above, none of Nonaka, Uosaki, Horsey, and Velazquez, alone or in combination, teach or suggest a tilt subsystem including a ball screw and rotary nut for tilting a patient positioning surface, as recited in claims 1 and 17. Therefore, the Applicant respectfully submits that a combination of Nonaka, Uosaki, Horsey, and Velazquez also fails to teach or suggest elements of at least claims 1 and 17.

The present rejection encompasses claims 7 and 18. The Applicant submits that claims 1 and 17 recite elements not taught or suggested by Nonaka, Uosaki, Horsey or Velazquez, taken alone or in combination. Claims 7 and 18 depend from claims 1 and 17, respectively. Therefore, the Applicant respectfully submits that claims 7 and 18 should be allowable.

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The Applicant next turns to the rejection of claims 4 and 12 under 35 U.S.C. § 103(a) as being unpatentable over Nonaka in view of Pattee. As stated by the Examiner on page 4 of the Office Action of November 26, 2004, Nonaka does not teach a tilt subsystem including a ball screw and rotary nut, as recited in claims 4 and 12. (Nov. 26, 2004, Office Action, page 4.)

Pattee describes a dual stage telescoping imaging table. The table of Pattee is capable of moving only in a longitudinal direction. (col. 3, line 53 to col. 5, line 20.) Pattee does not remedy the shortcomings of Nonaka. Specifically, Pattee is devoid of any teaching of table movement other than in a longitudinal direction. Therefore, Pattee is incapable of teaching or suggesting a tilt subsystem including a ball screw and rotary nut for tilting a patient positioning surface, as recited in claims 4 and 12. Thus, the Applicant respectfully submits that Pattee does not teach or suggest elements of at least claims 4 and 12.

Moreover, assuming for the sake of argument that one were motivated to combine Nonaka and Pattee, the combination would similarly fail to teach or suggest elements of at least claims 4 and 12. As described above, neither Nonaka or Pattee, alone or in combination, teach or suggest a tilt subsystem including a ball screw and rotary nut for tilting a patient positioning surface, as recited in claim 4. Likewise, as described above, neither Nonaka or Pattee, alone or in combination, teach or suggest maintaining a region of interest of the patient by tilting the patient positioning surface using a ball screw and

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rotary nut during movement of the patient positioning surface, as recited in claim 12. Therefore, the Applicant respectfully submits that a combination of Nonaka and Pattee also fails to teach or suggest elements of at least claims 4 and 12.

The present rejection encompasses claims 4 and 12. Claims 4 and 12 are amended to recite elements not taught or suggested by Nonaka or Pattee, taken alone or in combination. Therefore, the Applicant respectfully submits that claims 4 and 12 should be allowable.

The Applicant next turns to the rejection of claim 14 under 35 U.S.C. § 103(a) as being unpatentable over Nonaka in view of Velazquez. As described above, Nonaka does not teach returning the patient positioning surface to a horizontal starting position for emergency situations, as recited in claim 11.

Velazquez describes a patient security and restraint system. However, Velazquez does not remedy the shortcomings of Nonaka. Specifically, Velazquez is devoid of any disclosure of movement in an emergency situation. Therefore, Velazquez is incapable of teaching or suggesting returning the patient positioning surface to a horizontal starting position for emergency situations, as recited in claim 11. Thus, the Applicant respectfully submits that Velazquez does not teach or suggest elements of at least claim 11.

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Moreover, assuming for the sake of argument that one were motivated to combine Nonaka and Velazquez, the combination would similarly fail to teach or suggest elements of at least claim 11. As described above, neither Nonaka nor Velazquez, alone or in combination, teach or suggest returning the patient positioning surface to a horizontal starting position for emergency situations, as recited in claim 11. Therefore, the Applicant respectfully submits that a combination of Nonaka and Velazquez also fails to teach or suggest elements of at least claim 11.

The present rejection encompasses claim 14. Claim 11 is amended to recite elements not taught or suggested by Nonaka or Velazquez, taken alone or in combination. Claim 14 depends from claim 11. Therefore, the Applicant respectfully submits that claim 14 should be allowable.

Therefore, the Applicant respectfully submits that the claims of the present application should be allowable over the prior art.

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CONCLUSION

The Applicant respectfully submits that the claims of the present invention should be in condition for allowance. If the Examiner has any questions or the Applicant can be of any assistance, the Examiner is invited and encouraged to contact the Applicant at the number below.

The Commissioner is authorized to charge any necessary fees or credit any overpayment to the Deposit Account of GTC, Account No. 07-0845.

Respectfully submitted,

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